

WHAT IS CLAIMED IS:

1. A magnetic recording medium comprising:

a nonmagnetic support;

a first under layer which is constituted by a nonmetal element, per se, a compound consisting of nonmetal elements, or a compound containing titanium and a nonmetal element;

a second under layer containing at least one element selected from the group consisting of chromium, titanium, iridium, platinum, palladium, ruthenium, rhodium, rhenium and osmium; and

a magnetic layer which contains a ferromagnetic metal alloy containing at least cobalt, platinum and chromium, and a nonmagnetic compound,

in this order.

2. A magnetic recording medium comprising:

a nonmagnetic flexible polymer support;

a first under layer which is constituted by a nonmetal element, per se, a compound consisting of nonmetal elements, or a compound containing titanium and a nonmetal element;

a second under layer containing at least one element selected from the group consisting of chromium, titanium, iridium, platinum, palladium, ruthenium, rhodium, rhenium, osmium, cobalt, tungsten, vanadium, iron and molybdenum; and

a magnetic layer which contains a ferromagnetic metal

alloy containing at least cobalt, platinum and chromium, and
a nonmagnetic compound,
in this order.

3. The magnetic recording medium according to claim
1, wherein the nonmetal element is selected from C, Si, B,
Te, As, Se, I, N and O.

4. The magnetic recording medium according to claim
2, wherein the nonmetal element is selected from C, Si, B,
Te, As, Se, I, N and O.

5. The magnetic recording medium according to claim
1, wherein a crystal growth defective layer of the second under
layer at an interface between the first under layer and the
second under layer is 5 nm or less.

6. The magnetic recording medium according to claim
2, wherein a crystal growth defective layer of the second under
layer at an interface between the first under layer and the
second under layer is 5 nm or less.

7. The magnetic recording medium according to claim
1, wherein a surface roughness at a surface of the magnetic
recording medium is 3 nm or less.

8. The magnetic recording medium according to claim 2, wherein a surface roughness at a surface of the magnetic recording medium is 3 nm or less.

9. The magnetic recording medium according to claim 1, wherein the ferromagnetic metal alloy contains Co-Pt-Cr, Co-Pt-Cr-Ta, or Co-Pt-Cr-B.

10. The magnetic recording medium according to claim 2, wherein the ferromagnetic metal alloy contains Co-Pt-Cr, Co-Pt-Cr-Ta, or Co-Pt-Cr-B.

11. The magnetic recording medium according to claim 1, wherein the nonmagnetic compound is oxides, carbides or nitrides of Si, Zr, Ta, B, Ti, Al, Cr, Ba, Zn, Na, La, In, Pb.

12. The magnetic recording medium according to claim 2, wherein the nonmagnetic compound is oxides, carbides or nitrides of Si, Zr, Ta, B, Ti, Al, Cr, Ba, Zn, Na, La, In, Pb.

13. The magnetic recording medium according to claim 1, wherein the nonmagnetic compound is oxides of Si.

14. The magnetic recording medium according to claim 2, wherein the nonmagnetic compound is oxides of Si.

15. The magnetic recording medium according to claim 1, wherein the nonmetal element is selected from C, Si, B, Te, As, Se, I, N and O; a crystal growth defective layer of the second under layer at an interface between the first under layer and the second under layer is 5 nm or less; a surface roughness at a surface of the magnetic recording medium is 3 nm or less; the ferromagnetic metal alloy contains Co-Pt-Cr, Co-Pt-Cr-Ta, or Co-Pt-Cr-B; and the nonmagnetic compound is oxides of Si.

16. The magnetic recording medium according to claim 2, wherein the nonmetal element is selected from C, Si, B, Te, As, Se, I, N and O; a crystal growth defective layer of the second under layer at an interface between the first under layer and the second under layer is 5 nm or less; a surface roughness at a surface of the magnetic recording medium is 3 nm or less; the ferromagnetic metal alloy contains Co-Pt-Cr, Co-Pt-Cr-Ta, or Co-Pt-Cr-B; and the nonmagnetic compound is oxides of Si.